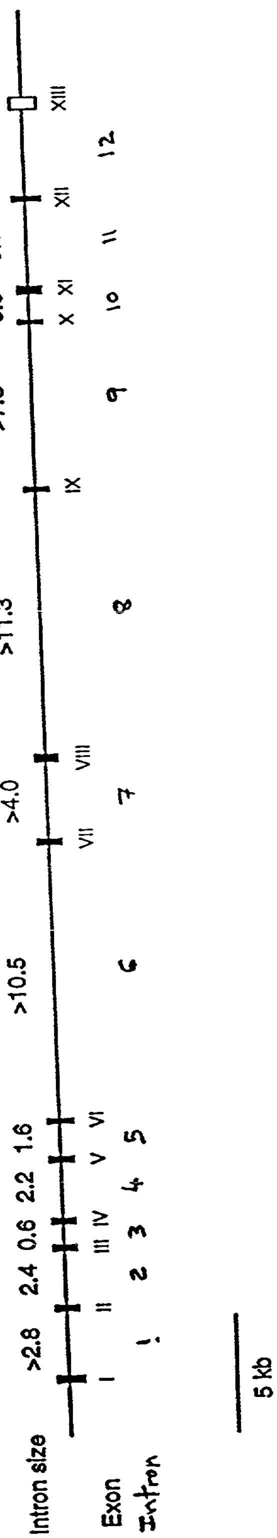
Figure 1



Intron size
Exon
Intron
>2.8
2.4
0.6
2.2
1.6
>10.5
>4.0
>11.3
>7.5
0.9
3.5
>4.5
I
II
III
IV
V
VI
VII
VIII
IX
X
XI
XII
XIII
1
2
3
4
5
6
7
8
9
10
11
12
5 kb

Figure 2A

promoter and exon 1

ACTGCGGAGATGAGGGTCTAGAAGGTGGTGGCGGGGCAT
GTGGACCGTTGTAAGGGCTCTGGGG**TTCCTGGTGGCT**
GGCGAAGTCCTACTCACAGTGACCAACCATGATGATGGT
CCCGATAGAGGAGGAGAGGGAGGAGGAGGGAAAAGGAAG
GGTGAGGGGCTCAGAGGGGAGAGCTGGGAGGAGGGGAGA
CATAGGTGGGGGAAGGGGTAGGAGAAAGGGGAAGGGAGC
AAGAGGGTGAGGGGCACCAGGCCCCATAGACGTTTTGGC
TCAGCGGCCACGAGG**CTTCATCAGCTCCCGCCCCAAAAC**
GGAAGCGAGGCCGTGGGGGCAGCGGCAGCATGGCGGGGC
TTGTCTTGGCGGCCATGGCCCCGCCCCCTGCCCGTCCGA
TCAGCGCCCCGCCCCGTCCCCGCCCCGACCCCGCCCCGG
GCCCGCTCAGGCCCCGC**CCCTGCCGCCGGAATCCTGAAG**
CCCAAGGCTGCCCGGGGGCGGTCCGGCGGCGCCGGCGAT
GGGGC*ATAAAA*CCACTGGCCACCTGCCGGGCTGCTCC

*TGCGTGCGCTGCCGTCCCGGATCC*ACCGTGCCTCTGCGG
CCTGCGTGCCCGGAGTCCCCGCCTGTGTCGTCTCTGTCG
CCGTCCCCGTCTCCTGCCAGGCGCGGAGCCCTGCGAGCC
GCGGGTGGGCCCCAGGCGCGCA**GACATG**$\boxed{G}$**GCTGCTCCGC** A
CAAAGCGCGCTGGGCTGCCGGGGCGCTGGGCGTCGCGGG
GCTACTGTGCGCTGTGCTGGGCGCTGTCATGATCGTGAT
GGTGCCGTCGCTCATCAAGCAGCAGGTCCTTAAG

GTGGGTGAGGGAGACCCCAGGGGGTCCGCGCACGGACCC
GGGCTGTTGGGCGCTGGGCGCCGGGAGGACCCGCGCGTT
GCGGTGGGTGGGCGACCGCAGCGGAATCGGCGCCCGGGC
CTGGCGCCGCAGAACACGAGGGAGGCCAGGCGCTTCGGG
AGGGGCTGCTGCCCGCCTCCCCACCACCCTCACC

Figure 2B

exon 2

AGCCTCATGTGCGAAGGGCTTTCCCACCACCTCCTATCC
CAAGCTCCCGCCGAGGAGCCCCTTCCCTGGCCGGGCTCG
GGCAGCTGTTCCGGAGCCTTGTGGTGGGGCG**TGGGGCC**
CTCATCACTCTCCTCACAAGCGTACTTGTCCCTTCCC
CTGCAG

AACGTGCGCATCGACCCCAGTAGCCTGTCCTTCAACATG
TGGAAGGAGATCCCTATCCCCTTCTATCTCTCCGTCTAC
TTCTTTGACGTCATGAACCCCAGCGAGATCCTGAAGGGC
GAGAAGCCGCAGGTGCGGGAGCGCGGGCCCTACGTGTAC
AG

GTGAGGCTGTGTCCACGTGATGGTGGACGGGCCGGCTGA
CGCTGGGCATGGGACGGGTCTCAN**AGTGGACGGGATG**
GGGAGGCTGCTGACTGACCCCCAAACATTGTTCCGGAA
GCACGCAACTCATAGTCGGGGTAAGTGCTACTCCCAAAA
AAGTTTGCGT

exon 3

CATGTCCTGCAGTGGGCAGGCAGCGGGAGGGACAGACTT
GGCGAAGGGGCCGAGCTCAGCTTTGGCTGTGGGGCCGGA
GGTGTGCACAGACGTCCAGGGCCCCTGGTTCCCAGGCAG
GC**ATTGCAGGCGAGTAGAAG**GGAAACGTCCCATGCAG
CGGGGCGGGGCGTCTGACCCACTGGCTTCCCCCACAG

GGAGTTCAGGCACAAAAGCAACATCACCTTCAACAACAA
CGACACCGTGTCCTTCCTcGAGTACCGCACCTTCCAGTT
CCAGCCCTCCAAGTCCCACGGCTCGGAGAGCGACTACAT
CGTCATGCCCAACATCCTGGTCTTG
A

GTGAGGCTGCCCTGTGGCCCACGCCGCCTCGCACCCTGA
CCTCGTCCCC**TGTCTCTCCTCCCGCCTG**CCCCTTGTG
CAGAGAGCAGTCCCTGAGGTGGTCGGAGCGTGGGGACTC
ACGCCTGGTGGGTGGCTTTCGGCCCTGTGCTGTCTCCAC
CACCCCCA

Figure 2C

exon 4

GGTGGTTCTGGTGTCCCAGATGCCCCACGTGGCCACTCC
AGGGGCCTCCTGCACCCCAGCATTTCCCTTC**ATGGGCT**
CTTTGCTGTGAGGCCCAGCTGGGGCCAAGGGAGGATG
GGCCAGCCACGTCCAGCCTCTGACACTAGTGTCCCTTCG
CCTTGCAG

GGTGCGGCGGTGATGATGGAGAATAAGCCCATGACCCTG
AAGCTCATCATGACCTTGGCATTCACCACCCTCGGCGAA
CGTGCCTTCATGAACCGCACTGTGGGTGAGATCATGTGG
GGCTACAAGGACCCCTTGTGAATCTCATCAACAAGTACT
TTCCAGGCATGTTCCCCTTCAAGGACAAGTTCGGATTAT
TTGCTGAG

GTACGTGTGGCCTGGTGAGAAGCCAAAGATTCAGGCCTG
TGTCCTGT**CTTCCCCTCACACAGCCTGG**ACACTGGTC
ACCAGCTTGCTTTGTAGCTGGCTGGGGATCTAGTGGCTG
TGGGTTGTAAGTGACTGAGAACCTGACTCAAACCGGCTT
GAGTGAAA

exon 5

CCTCTCGGTCCCCAGACACTGGGCATTTGGCAGTGAACC
AGATGCTGGGGGCCCTGTCCTTCTGGTGGAGGGGGAGGA
GGGCTCAG**CCCAGAATGTTCAGACCAG**GCCGGCTCAA
TGGCAGGCCTAAGCCTTACGATGCTGTTCCCTGCTGTGT
CTGTAG

CTCAACAACTCCGACTCTGGGCTCTTCACGGTGTTCACG
GGGGTCCAGAACATCAGCAGGATCCACCTCGTGGACAAG
TGGAACGGGCTGAGCAAG

GTGAGGGGCGAGAGGCGAGGGCCCCTGTCGCCAGGGAGA
GGGGAGGGTGGGCC$\boxed{C}$GGCCATGGCTGCTCGGGAGTGGCA T
GGGACCAGAGAGCTC**CTTTGTCGTGAAGAG**
GGTGCTGGGAGGATGAACACTCTTGAAGTTGGAGGAGGG
ATTTTA

Figure 2D

exon 6

TCTCTGTGTGTCTACATAGCCTGCCCTCTTCCCACCGTG
CCAGTATTGGGAATTGAGTGGCCGTGCGTGCACCAGGGT
GAGTTAGGTGTGCAG**CACCTGAGAGGGCTTATTA**AGG
GGCCTTGGCCCTACTGAGGGGTCTAGTCTGGATGCTTCC
CCCCAG

GTTGACTTCTGGCATTCCGATCAGTGCAACATGATCAAT
GGAACTTCTGGGCAAATGTGGCCGCCCTTCATGACTCCT
GAGTCCTCGCTGGAGTTCTACAGCCCGGAGGCCTGCCG

GTAATCACTGGGACTCGGGGCCTCCTGGGTTTCCTGGGT
AGCTCATGGCCAAATTCTGTGGTGTTGGCTGT**GCACTT**
GGAAAGCATTTTGACTCATCGTGGATTTGACTCAGTAG
CCCTTGGCACCAGCTTGAATTCTCTTTGGTCACACCACC
AAAAGC

exon 7

GGAGGTCGCTGCAGCTCCGCGGGTGAGAGATGGGGGCGG
TTTGGACCCGGGAGGTGGTAGCGCCCGTGGGGAGAAGTG
GCTGGATCTGGGCAGCCTTTGGCAGGGCCTGGCTCTGGC
CGCCGGGTCTGGGTGTCCCCTCTCATCCTGTCTGTCC
CCTGCAG

ATCCATGAAGCTAATGTACAAGGAGTCAGGGGTGTTTGA
AGGCATCCCCACCTATCGCTTCGTGGCTCCCAAAACCCT
GTTTGCCAACGGGTCCATCTACCCACCCAACGAAGGCTT
CTGCCCGTGCCTGGAGTCTGGAATTCAGAACGTCAGCAC
CTGCAGGTTCA

GTACGTGCCGTCCCCTGTTCTGGGATNGCCGGAGGGTGT
TAGGTNTNGGGCACCTNANGGTTTATCTGCCCAATGCTG
TCTGCTTAATCTCTGGCCTCTGTACTCTTGATAACC
CATTAAGCCAAAAATATGATGCCTCTGGGACGATATCTG

Figure 2E

exon 8

TGGGGC**TTTTTACAGAATGGAGG**AAGGGATCCTCTCT
GTCGGGTATTATGGTCATCGCCACGGGGGTGCCGTGCAG
ACCACAGCTCTGTGCAGACTTCCGGAGTGGCAGGACGTG
CCAATATACTGTCGTTGTATGATGTCCCCTCCCTGCCCT
TGTTGTAG

GTGCCCCCTTGTTTCTCTCCCATCCTCACTTCCTCAACG
CCGACCCGGTTCTGGCAGAAGCGGTGACTGGCCTGCACC T
CTAACCAGGAGGCACACTCCTTGTTCCTGGACATCCACC
CG

GTGAGCCCCTGCCATCCTCTGTGGGGGGTGGGTGATTCC
TGGTTGGAG**CACACCTGGCTGCCTCCT**CTCTCCCCAG
GCAGAGAGCTGCTGTGGGCTGGGGTGGTGGGAAGCCTGG
CTTCTAGAATCTCGAGCCACCAAAGTTCCTTACT

exon 9

CCCCAGCCTGTGGCTTGTTTTAGGTAAGATACAAGCAAG
CTCCACTGGGCAGTTAGCTGGGACGCCCACCCTCTTGAC
TGGGACCAGGGAAAAGAA**GGTTGACTGTGTCCCTGGA**
GCTTGGGGGTGGCCAGTCTCCTCACTGTGTTTGTTGCCG
CAG

GTCACGGGAATCCCCATGAACTGCTCTGTGAAACTGCAG
CTGAGCCTCTACATGAAATCTGTCGCAGGCATTGG

GTGAGTGGGGACTGGGAACTGGGGCTGCATTGCTCATTG
AGAGATTANGT**GCTCAGTGCTCCAGTGTTCCCAGAC**
TCCCCTGACATACCCCAGGAAACAGGGCATGGGGAAGGG
AGAGGGTCCTATTGGGGGTGGAATCCAGTCCCTGCTGAT
CTTCTC

Figure 2F

exon 10

ATGGCTCCTAAAGTGTTTCAGCTCATTGTTTATATTTGG
TGGTGAGGGTTTAGTGTGTGCAAAATTATACTAAACC
TGTTTAGATGTTGTATTCAAGCAGAATTAGATCAAGTTT
GGGTGTAAGACTTTGTTCCAACACCTATGTCTTGCTTAT
TTCCAG

ACAAACTGGGAAGATTGAGCCTGTGGTCCTGCCGCTGCT
CTGGTTTGCAGAG

GTAAGGGTGCGTTGGGCACAGCGTCGGGGGCTTTTGTTA
ATAGCCAATGTGGGCATTT**GAGGCAGGAGGCGGGGGG**
AGCACCTTGTAGAAAGGGAGAGGGCTGAGCCAGGGTAAC
CGGACTGTTACATGGACCAGCGTATCATACACTTCACCC
TGTC

exon 11

CCTGGAGGGAGGAGGTCCCTGGCAGGCTCCAACACATGC
TTTAGCCGGGAAGCTTGAGGTGGGGAAAAGCTGAGGCGG
GCACAGAGG**AAGGTGTTGGGTGGCATCTG**CGCTGTAG
CCCGCAGCCTGCGGCCCCAGCTCATGTGTTTGTCATTCT G
GTCTCCTCAG

AGCGGGGCCATGGAGGGGGAGACTCTTCACACATTCTAC
ACTCAGCTGGTGTTGATGCCCAAGGTGATGCACTATGCC
CAGTACGTCCTCCTGGCGCTGGGCTGCGTCCTGCTGCTG
GTCCCTGTCATCTGCCAAATCCGGAGCCAA

GTAGGTGCTGGCCAGAGGGCAGCCCGGGCTGACAGCCAT
TCGCTTGCCTGCTGGGGGAAAGGGGCCTCAGATCGGACC
CTCTGG**CCAACCGCAGCCTGGAG**CCCACCTCCAGCAG
CAGTCCTGCGTCTCTGCCGGAGTGGGAGCGGTCACTGCT
GGGGG

Figure 2G

exon 12

CCCCACATCTCAGCCACCTGCAATCGTTGAGGGTTGTTG
GACTCTAAACTTATGTGCCTTTCCTGTTTCCTCTTTGCC
TTTTGCAAA**TTGAAGAACCGTGTAAAA**CCATTTTTAT
GTGGCTTCAACGTCAACTATAAATTAGCTTGGTTATCTT
CTAG

GAGAAATGCTATTTATTTTGGAGTAGTAGTAAAAAGGGC
TCAAAGGATAAGGAGGCCATTCAGGCCTATTCTGAATCC
CTGATGACATCAGCTCCCAAGGGCTCTGTGCTGCAGGAA
GCAAAACTGTAG

GTGGGTACCAGGTAATGCCGTGCGCCTCCCCGCCCCCTC
CCATATCAAGTAGAATGCTGGCGGCTTAAAACATTTGGG
GTCCTGC**TCATTCCTTCAGCCTCAA**CTTCACCTGGAG
TGTCTACAGACTGAAGATGCATATTTGTGTATTTTGCTT
TTGGAGAAA

Figure 3A

ACCGTGCCTCTGCGGCCTGCGTGCCCGGAGTCCCCGCCTGTGTCGTCTCTGTCGCCGTCCCCGTCTCCTGCCAGGCGCG 79

M G C S A K A R W A 10

GAGCCCTGCGAGCCGCGGGTGGCCCCAGGCGCGCAGAC ATG GGC TGC TCC GCC AAA GCG CGC TGG GCT 148

A G A L G V A G L L C A V L G A V M I V 30

GCC GGG GCG CTG GGC GTC GCG GGG CTA CTG TGC GCT GTG CTG GGC GCT GTC ATG ATC GTG 208

exon 1 → exon 2

M V P S L I K Q Q V L K N V R I D P S S 50

ATG GTG CCG TCG CTC ATC AAG CAG CAG GTC CTT AAG AAC GTG CGC ATC GAC CCC AGT AGC 268

L S F N M W K E I P I P F Y L S V Y F F 70

CTG TCC TTC AAC ATG TGG AAG GAG ATC CCT ATC CCC TTC TAT CTC TCC GTC TAC TTC TTT 328

D V M N P S E I L K G E K P Q V R E R G 90

GAC GTC ATG AAC CCC AGC GAG ATC CTG AAG GGC GAG AAG CCG CAG GTG CGG GAG CGC GGG 388

→ exon 3

P Y V Y R E F R H K S N I T F N N N D T 110

CCC TAC GTG TAC AGG GAG TTC AGG CAC AAA AGC AAC ATC ACC TTC AAC AAC AAC GAC ACC 448

V S F L E Y R T F Q F Q P S K S H G S E 130

GTG TCC TTC CTC GAG TAC CGC ACC TTC CAG TTC CAG CCC TCC AAG TCC CAC GGC TCG GAG 508

→ exon 4

S D Y I V M P N I L V L G A A V H M E N 150

AGC GAC TAC ATC GTC ATG CCC AAC ATC CTG GTC TTG GGT GCG GCG GTG ATG ATG GAG AAT 568

K P M T L K L I M T L A F T T L G E R A 170

AAG CCC ATG ACC CTG AAG CTC ATC ATG ACC TTG GCA TTC ACC ACC CTC GGC GAA CGT GCC 628

F M N R T V G E I M W G Y K D P L V N L 190

TTC ATG AAC CGC ACT GTG GGT GAG ATC ATG TGG GGC TAC AAG GAC CCC CTT GTG AAT CTC 688

→ exon 5

I N K Y F P G M F P F K D K F G L F A E 210

ATC AAC AAG TAC TTT CCA GGC ATG TTC CCC TTC AAG GAC AAG TTC GGA TTA TTT GCT GAG 748

L N N S D S G L F T V F T G V Q N I S R 230

CTC AAC AAC TCC GAC TCT GGG CTC TTC ACG GTG TTC ACG GGG GTC CAG AAC ATC AGC AGG 808

→ exon 6

I H L V D K W N G L S K V D F W H S D Q 250

ATC CAC CTC GTG GAC AAG TGG AAC GGG CTG AGC AAG GTT GAC TTC TGG CAT TCC GAT CAG 868

C N M I N G T S G Q M W P P F M T P E S 270

TGC AAC ATG ATC AAT GGA ACT TCT GGG CAA ATG TGG CCG CCC TTC ATG ACT CCT GAG TCC 928

→ exon 7

S L E F Y S P E A C R S M K L M Y K E S 290

TCG CTG GAG TTC TAC AGC CCG GAG GCC TGC CGA TCC ATG AAG CTA ATG TAC AAG GAG TCA 988

G V F E G I P T Y R F V A P K T L F A N 310

GGG GTG TTT GAA GGC ATC CCC ACC TAT CGC TTC GTG GCT CCC AAA ACC CTG TTT GCC AAC 1048

G S I Y P P N E G F C P C L E S G I Q N 330

GGG TCC ATC TAC CCA CCC AAC GAA GGC TTC TGC CCG TGC CTG GAG TCT GGA ATT CAG AAC 1108

→ exon 8

V S T C R F S A P L F L S H P H F L N A 350

GTC AGC ACC TGC AGG TTC AGT GCC CCC TTG TTT CTC TCC CAT CCT CAC TTC CTC AAC GCC 1168

D P V L A E A V T G L H P N Q E A H S L 370

GAC CCG GTT CTG GCA GAA GCG GTG ACT GGC CTG CAC CCT AAC CAG GAG GCA CAC TCC TTG 1228

Figure 3B

→ exon 9

F L D I H P V T G I P M N C S V K L Q L 390
TTC CTG GAC ATC CAC CCG GTC ACG GGA ATC CCC ATG AAC TGC TCT GTG AAA CTG CAG CTG 1288

→ exon 10

S L Y M K S V A G I G Q T G K I E P V V 410
AGC CTC TAC ATG AAA TCT GTC GCA GGC ATT GGA CAA ACT GGG AAG ATT GAG CCT GTG GTC 1348

→ exon 11

L P L L W F A E S G A M E G E T L H T F 430
CTG CCG CTG CTC TGG TTT GCA GAG AGC GGG GCC ATG GAG GGG GAG ACT CTT CAC ACA TTC 1408

Y T Q L V L M P K V M H Y A Q Y V L L A 450
TAC ACT CAG CTG GTG TTG ATG CCC AAG GTG ATG CAC TAT GCC CAG TAC GTC CTC CTG GCG 1468

→ exon 12

L G C V L L L V P V I C Q I R S Q E K C 470
CTG GGC TGC GTC CTG CTG CTG GTC CCT GTC ATC TGC CAA ATC CGG AGC CAA GAG AAA TGC 1528

Y L F W S S S K K G S K D K E A I Q A Y 490
TAT TTA TTT TGG AGT AGT AGT AAA AAG GGC TCA AAG GAT AAG GAG GCC ATT CAG GCC TAT 1588

→ exon 13

S E S L M T S A P K G S V L Q E A K L * 510
TCT GAA TCC CTG ATG ACA TCA GCT CCC AAG GGC TCT GTG CTG CAG GAA GCA AAA CTG TAG 1648

GGTCCTGAGGACACCGTGAGCCAGCCAGGCCTGGCCGCTGGGCCTGACCGGCCCCCCAGCCCCTACACCCCGCTTCTCC 1727

CGGACTCTCCCAGCAGACAGCCCCCCAGCCCCACAGCCTGAGCCTCCCAGCTGCCATGTGCCTGTTGCACACCTGCACA 1806

CACGCCCTGGCACACATACACACATGCGTGCAGGCTTGTGCAGACACTCAGGGATGGAGCTGCTGCTGAAGGGACTTGT 1885

AGGGAGAGGCTCGTCAACAAGCACTGTTCTGGAACCTTCTCTCCACGTGGCCCACAGGCCTGACCACAGGGGCTGTGGG 1964

TCCTGCGTCCCCTTCCTCGGGTGAGCCTGGCCTGTCCCGTTCAGCCGTTGGCCCAGGCTTCCTCCCCTCCAAGGTGAA 2043

ACACTGCAGTCCCGGTGTGGTGGCTCCCCATGCAGGACGGGCCAGGCTGGGAGTGCCGCCTTCCTGTGCCAAATTCAGT 2122

GGGGACTCAGTGCCCAGGCCCTGGCCACGAGCTTTGGCCTTGGTCTACCTGCCAGGCCAGGCAAAGCGCCTTTACACAG 2201

GCCTCGGAAAACAATGGAGTGAGCACAAGATGCCCTGTGCAGCTGCCCGAGGGTCTCCGCCCACCCCGGCCGGACTTTG 2280

ATCCCCCCGAAGTCTTCACAGGCACTGCATCGGGTTGTCTGGCGCCCTTTTCCTCCAGCCTAAACTGACATCATCCTAT 2359

GGACTGAGCCGGCCACTYTYTGGCCGAAGTGGCCGCAGGCTGTGCCCCCGAGCTGCCCCCACCCCCTCACAGGGTCCCT 2438

CAGATTATAGGTGCCCAGGCTGAGGTGAAGAGGCCTGGGGCCCTGCCTTCCGGGCGCTCCTGGACCCTGGGGCAAACC 2517

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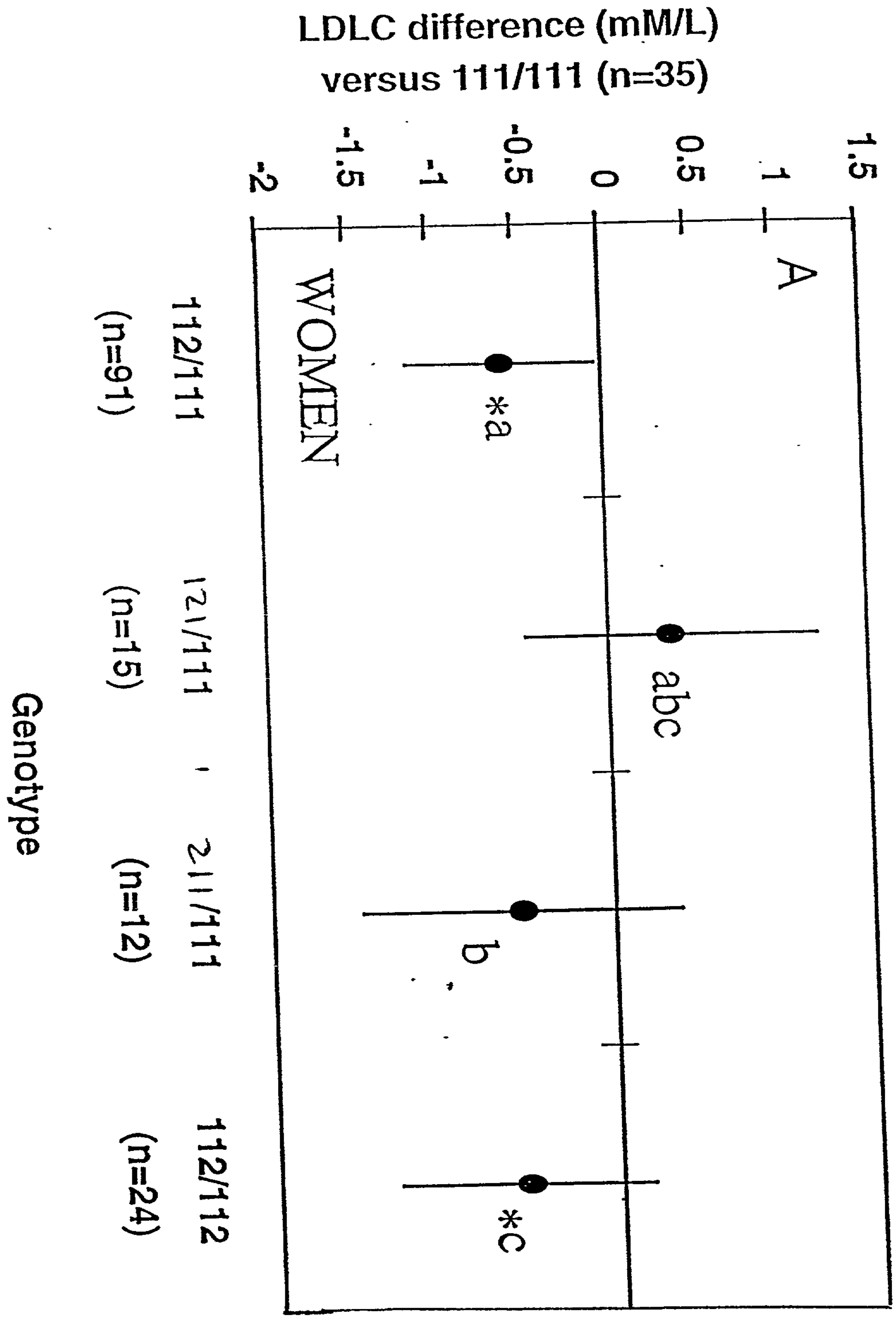
AAAAAATGGGAAAAAAAAAAAAAAAAAAAAAAAA 2630

Figure 4



09779152 .020801

Figure 5

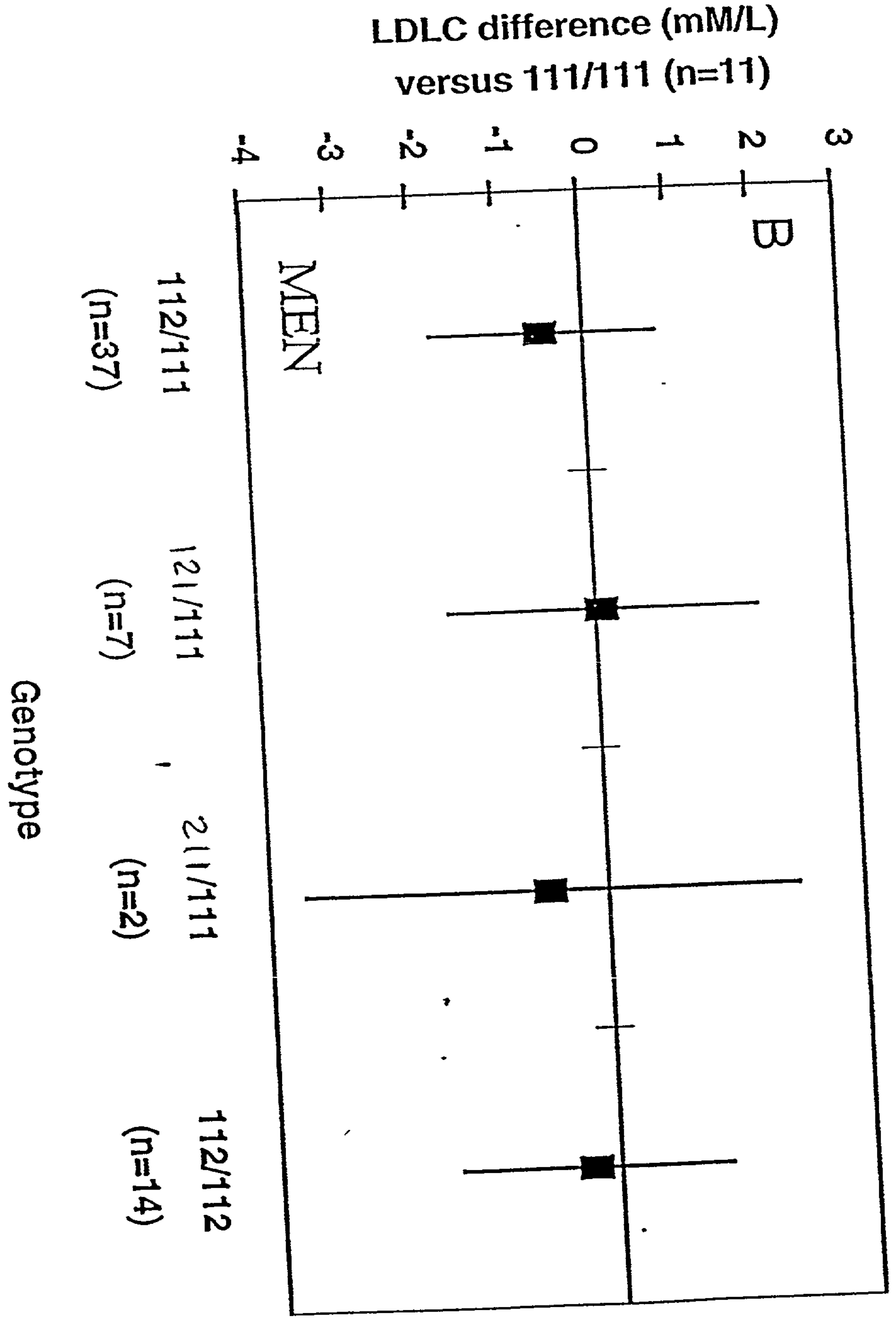
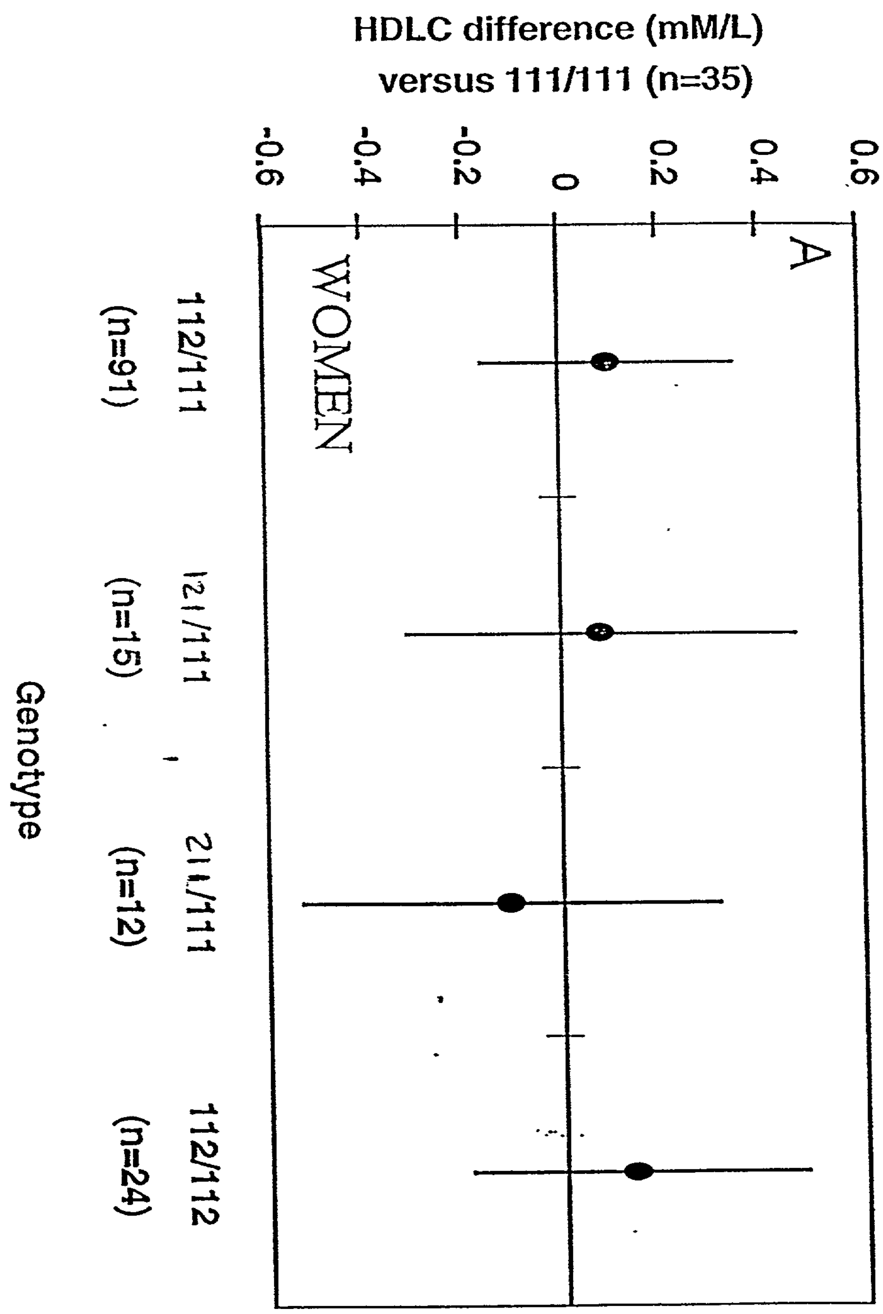
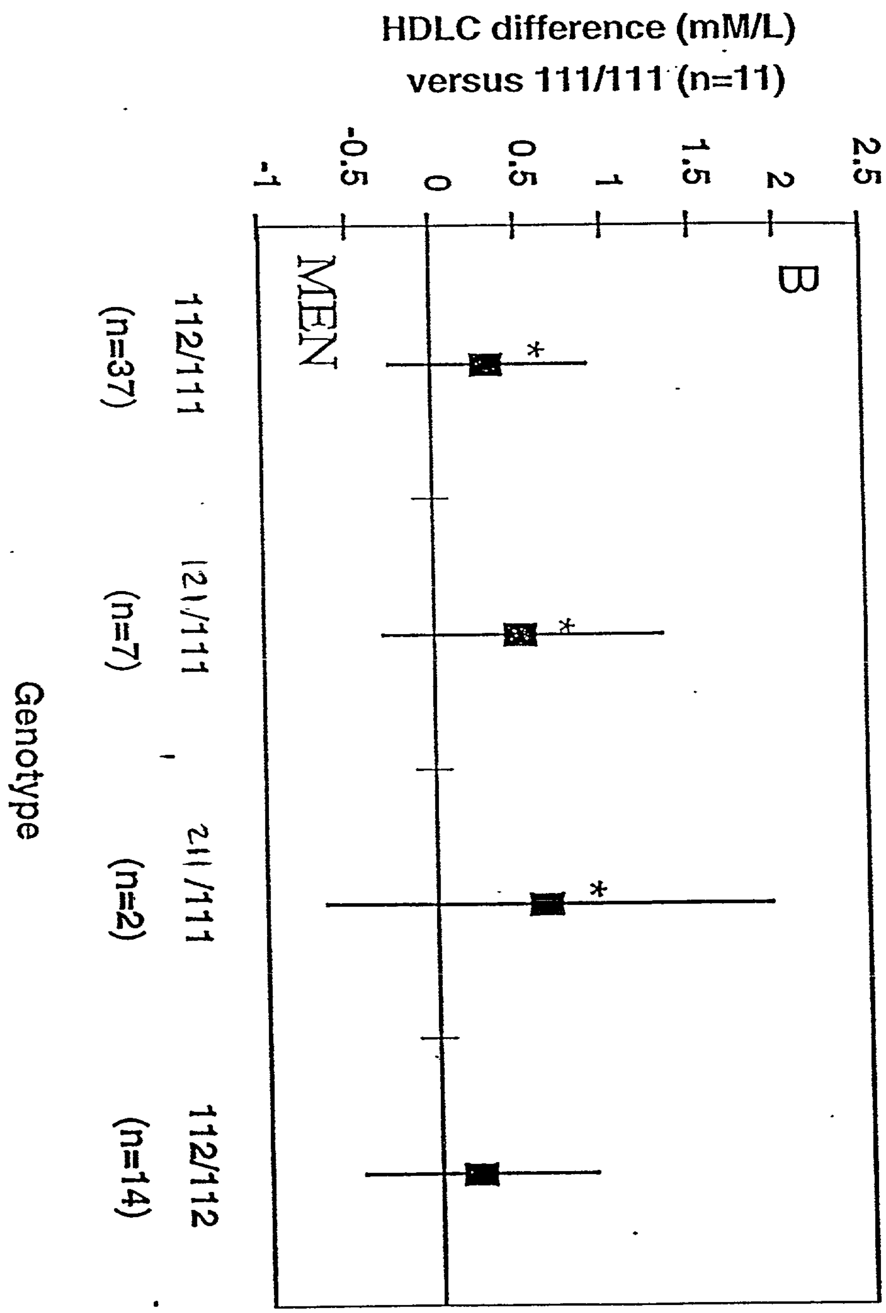

LDLC difference (mM/L)
versus 111/111 (n=11)
-4
-3
-2
-1
0
1
2
3
B
MEN
112/111
(n=37)
121/111
(n=7)
211/111
(n=2)
112/112
(n=14)
Genotype

Figure 6



09279452 .020801

Figure 7



09791452.020801

Figure 8

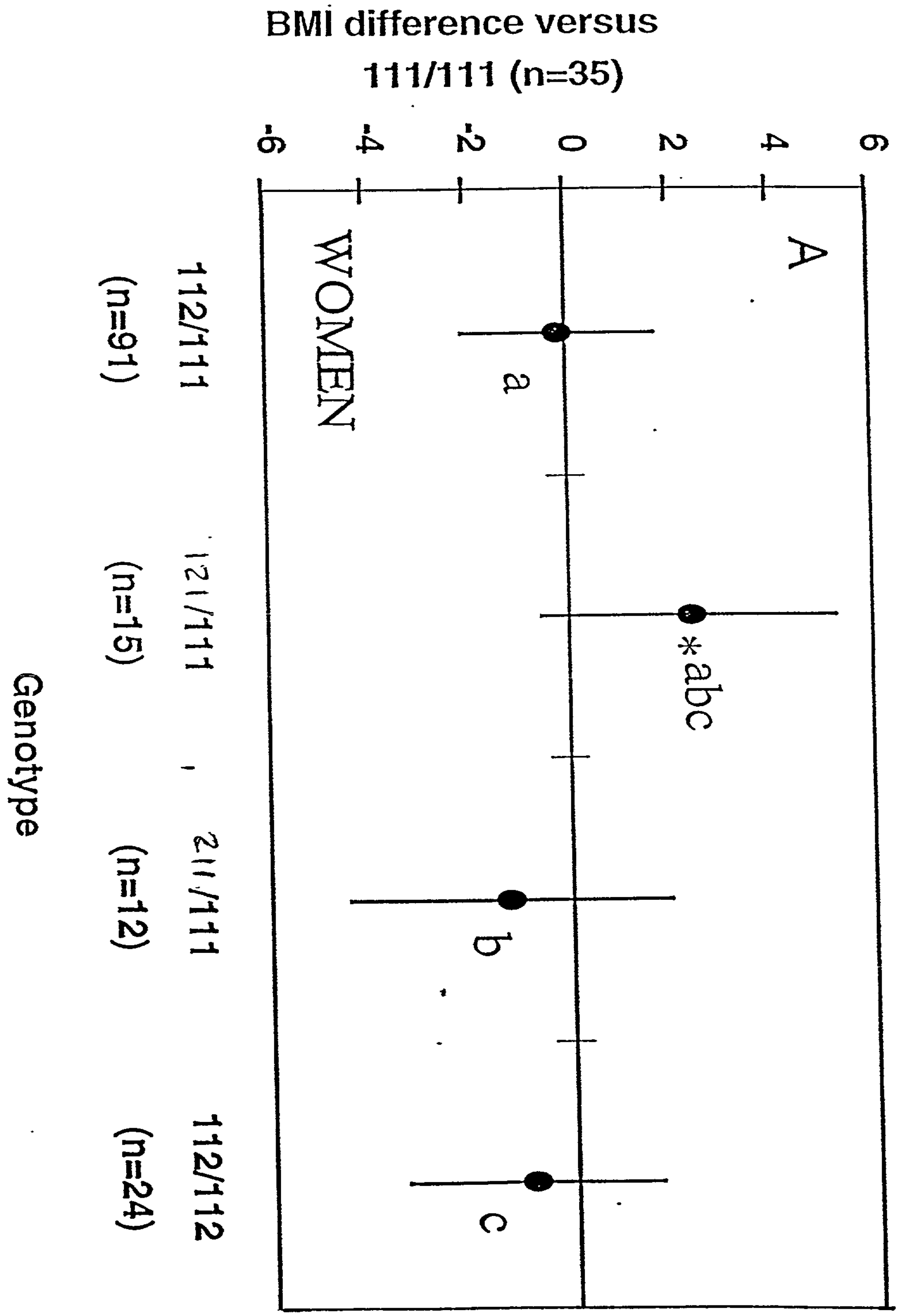
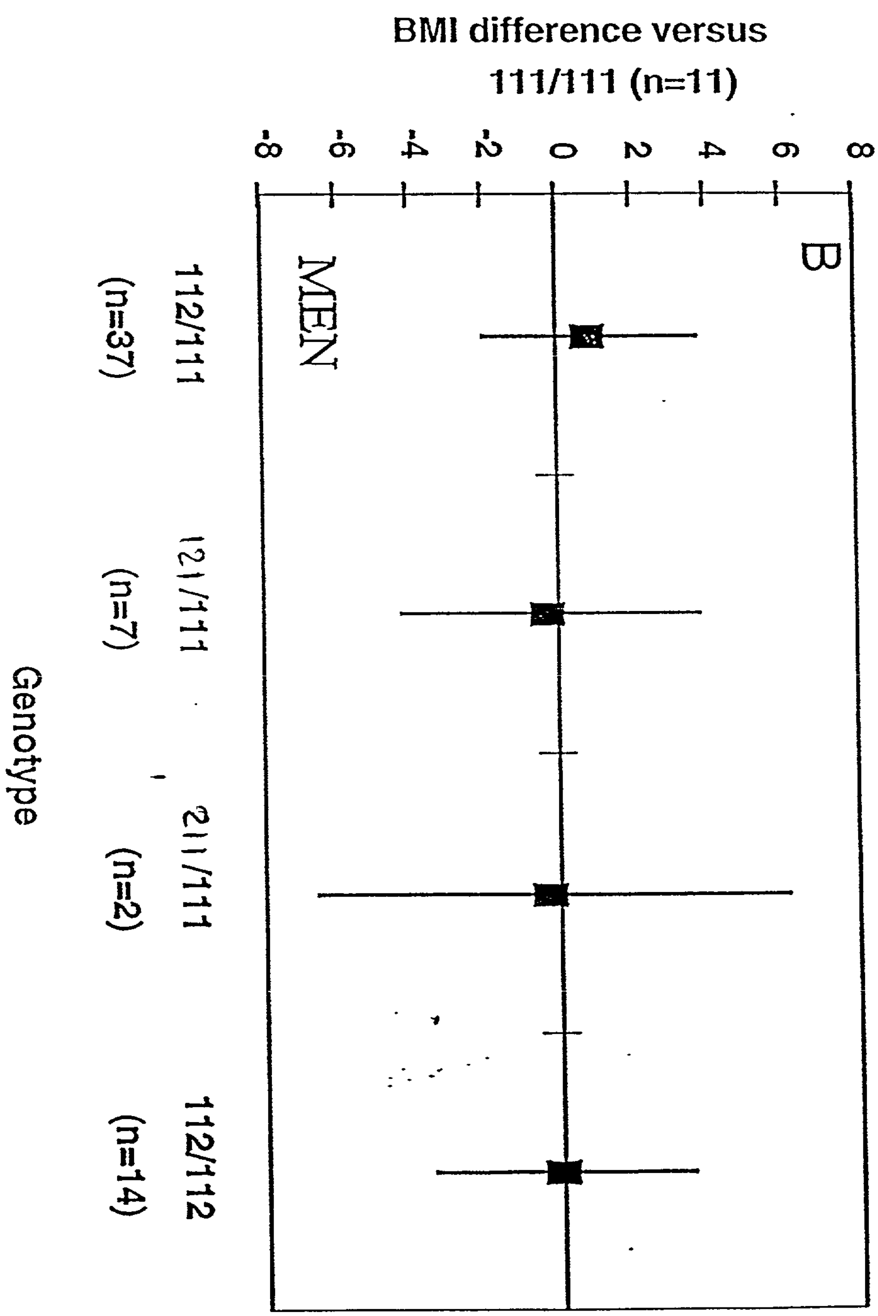

BMI difference versus
111/111 (n=35)
6
4
2
0
-2
-4
-6
A
WOMEN
a
*abc
b
c
112/111
(n=91)
121/111
(n=15)
211/111
(n=12)
112/112
(n=24)
Genotype

Figure 9


BMI difference versus
111/111 (n=11)
-8
-6
-4
-2
0
2
4
6
8
B
MEN
112/111
(n=37)
121/111
(n=7)
211/111
(n=2)
112/112
(n=14)
Genotype